NAVFAC
Naval Facilities Engineering Command

Navy Techval

The Navy Energy Program's New Technology Validation Team

Energy Efficiency In Government Building Retrofits

February 4 – 6, 2005; Orlando FL

Paul Kistler, PE CEM

Naval Facilities Engineering Service Center

Port Hueneme CA

Navy Energy Techval

- Purpose
- Process
- Expectations
- Results

TECHVAL PROGRAM DESCRIPTION/PURPOSE

- Exert pull on emerging technologies to achieve the 35% energy reduction goals required by EO 13123 by 2010.
- Accelerate the adoption of new energy saving technologies by the Navy.
- Reduce the risk and cost to the Navy of incorporating emerging energy technologies.
- Field evaluate newer technologies to meet Navy performance requirements.
- Demonstrate their reliability and supportability to the risk averse private sector (ESCOs and Utilities).
- Demonstrate their reliability and supportability to risk averse DON users who have no resources to correct failures or respond to high utility bills.

Navy Energy Techval

Techval Web Site Features

- Explains Navy Techval Program
- Describes past and current demonstration projects
- Provides for on-line submission of project proposals
- On-line nomination of sites for projects
- On-line comments and voting for both TWG
- Tracking of projects as they happen
- Technology Reports Section
- Tech Assist

http://techval-energy.nfesc.navy.mil

Navy Energy Techval Expectations

- Use the data collected by Techval to transition newer technologies into Navy wide use
- Use the data collected by Techval to prevent the Navy from investing in technologies that do not work
- Tech Assistance
- Help the Navy to meet increasingly tougher energy goals

Navy Energy Techval

Cool Roof reflective roof coating

NS Pearl Harbor HI

Navy Energy Techval

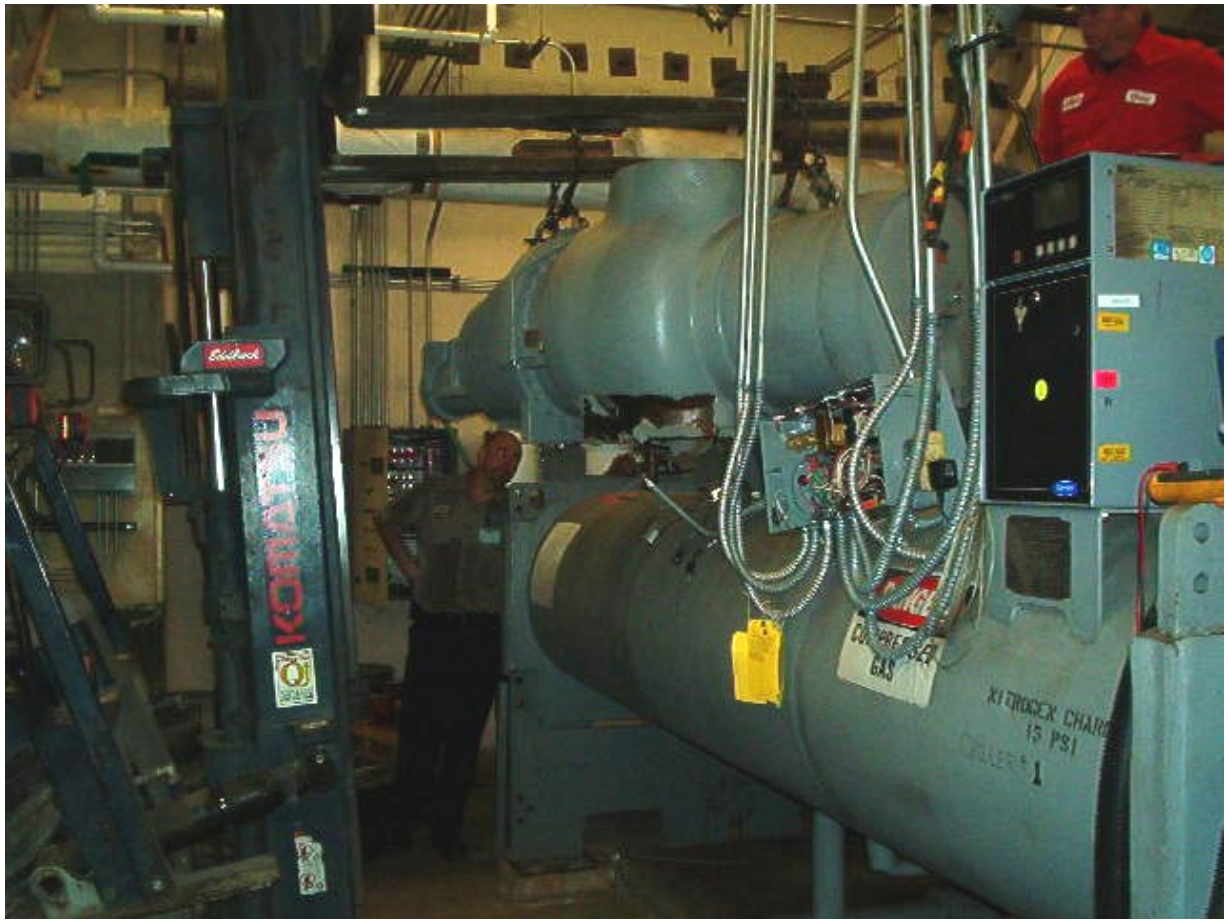
80 ton chiller with magnetic bearings and integral VFD

NUWC Newport RI

Navy Energy Techval

Removal of 350 chiller compressor

NRSW San Diego CA



Navy Energy Techval

Two 80 ton chiller compressors with magnetic bearings and integral VFD retrofit

NRSW San Diego CA

Navy Energy Techval

80 ton chiller compressor with magnetic bearings and integral VFD

NRSW San Diego CA

NAVY RETROFIT COMPARISON

SCREW CHILLER		**MAGNETIC BEARING CHILLER**				
Test began at 7/08/04 12:03:00		Test began at 7/05/04 12:00:00				
Test ended at 7/09/04 12:03:00		Test ended at 7/06/04 12:00:00				
Measurement	**Before**	**After**	**Units**	**Change**	**%Change**	
Current, A Phase, Ave:		109.5	92.4	amps	-17.2	-15.7 %
Current, B Phase, Ave:		106.8	90.5	amps	-16.3	-15.3 %
Current, C Phase, Ave:		106.1	90.6	amps	-15.5	-14.6 %
Power Factor, B Phase, Ave:			0.88	0.91	0.03	2.9 %
Power Factor, C Phase, Ave:			0.90	0.92	0.02	2.4 %
Energy, A Phase:		663	568	KWH	-94	-14.2 %
Energy, B Phase:		632	551	KWH	-81	-12.9 %
Energy, C Phase:		640	560	KWH	-80	-12.6 %
Energy, Total Elapsed:		**1936**	**1680**	**KWH**	**-256**	**-13.2 %**
Energy, est. per month:			**58948**	**51138**	**KWH**	**-7809** **-13.2 %**

Navy Energy Techval

Thermal destratifier for high bay warehouses and hangars

NSWC Crane IN

VCCD West Bethesda MD

Navy Energy Techval

Click here for an additional Word file, on cool roof projects, provided by the speaker…